REMARKS

This Reply is filed in response to the Examiner's non-final Office Action mailed September 10, 2002. Claims 48 and 50-52 were pending in the current prosecution. New claims 53 and 54 are added by this amendment. Support for the new claims are found in Example 3, pages 11-13 and Table 1 of the Specification. No new matter is added.

Reconsideration is respectfully requested in view of the above amendments and following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Rejections Under 35 U.S.C. 112, Second Paragraph

Claims 50-52 stand rejected as allegedly being indefinite for failing to point out and distinctly claim the subject matter which the applicant regards as the invention. The Office has indicated that Claims 50-52 are indefinite because they are dependent upon non-elected claim 49. In response, claims 50 and 52 have been amended to delete the reference to non-elected claim 49. Claim 51 is cancelled. Applicant respectfully requests that the rejection under 35 U.S.C, 112, second paragraph be withdrawn.

Rejections Under 35 U.S.C. 102

1. Claims 48 and 51 stand rejected as allegedly being anticipated by Roser (U.S. Pat. No. 4,891,319).

Roser is cited for disclosing the drying of proteins and other macromolecules in the presence of trehalose at concentrations of 0.05-20% by weight. (Office Action, page 3). The Examiner also states that "[i]t is well known in the art that agarose is a particulate." (Office Action, page 3, line 6).

Applicant respectfully traverses the Examiner's statement that agarose is a particulate as disclosed in the cited Roser patent.

The Roser patent discloses the preservation of agarose gels dried in the presence of trehalose. (Roser, col. 3, lines 42-58). In particular, the agarose gels of Roser are "made fresh in the laboratory for each experiment by **heating solid agarose in buffer until it dissolves**, then

pouring the molten agarose into a former and cooling to gel the agarose." (emphasis added; Roser, col. 3, lines 47-51). According to Roser, "2 and 3% agarose gels containing 2-20% trehalose can be dried and subsequently rehydrated." (Roser, col. 3, lines 56-58; and Example 11, col. 12-13).

It is evident from the Specification of Roser that the "agarose" disclosed in the Roser patent refers to gels comprising agarose **dissolved** in buffer and not agarose as "particulates in suspension" as specified in claim 48.

Therefore, Applicant respectfully submits that Roser does not disclose a "method of reducing aggregation during dehydration and rehydration of particulates in suspension' in the presence of trehalose and respectfully request that the rejection under 35 USC § 102(b) be withdrawn.

2. Claims 48 and 50 stand rejected as allegedly being anticipated by Cox *et al.* (U.S. Pat. No. 5,902,565).

The Examiner states that Cox *et al.* teach drying a vaccine comprising an aluminum salt adjuvant (aluminum hydroxide) and trehalose at col. 5, lines 66-67 and claims 1, 3-4 and 6.

The Cox *et al.* patent is directed to the use of trehalose as a "protein stabilizer" in drying suspensions of aluminium salt adsorbed immunogens. (*Cox et al.* col. 4, lines 51-52). Cox *et al.* is silent on the effects of trehalose on the physical aggregation of particulate suspensions and only addresses chemical degradation or lack thereof. (*Cox et al.* col. 4, lines 58-59).

Further, Cox *et al.* teach adding trehalose to a concentration of 5% (w/v) to achieve "high retention of in vitro activity and no reduction in immunogenicity (Group 2 and 6)." (Cox *et al.* col. 9, lines 53-58 and Table 1, groups 2 and 6). Cox *et al.* teach the use of trehalose only at a concentration of 5%. (*see also Cox et al.* Tables 5 and 6). Cox *et al.* do not teach or disclose the use of trehalose at concentrations of "at least 10% (w/v)" as specified in amended claim 48.

The Specification of the present application discloses that the aggregation of particulates such as colloidal gold and polystyrene latex are succesfully prevented by 10% trehalose as specified in claims 48. Applicant amends claim 48 to specify trehalose added to a concentration

of "at least 10% (w/v) of trehalose sufficient to prevent aggregation upon rehydration." Cox *et al.* do not teach prevention of aggregation by the addition of trehalose.

As stated in the Specification, "the amount of trehalose found to be effective at preventing aggregation cannot be directly extrapolated from the amount of trehalose effective in preventing dessication damage." (Specification, page 8, lines 21-24). The Cox *et al.*patent is directed to preventing dessication damage with 5% trehalose and do not teach the use of trehalose at a concentration of 10%. Thus, Cox *et al.* does not teach, suggest or inherently disclose the limitation of "at least 10% (w/v) of trehalose sufficient to prevent aggregation upon rehydration" specified in claim 48 as amended.

Applicant amends claim 50 to remove reference to aluminum hydroxide. New claim 53 is directed to "[a] method of reducing aggregation during dehydration and rehydration of" a particulate suspension of aluminum hydroxide by adding "at least 15% (w/v) of trehalose."

In contrast, the present application specifies that trehalose, at a concentration of 7.5%, "is not sufficient for preventing aggregation during the drying process." (Specification, page 12, lines 26-28, and Table 1). Thus, Cox *et al.* do not teach or suggest the concentrations of trehalose necessary to prevent aggregation of aluminum hydroxide as taught by the present invention and specified in claims 53 and 54.

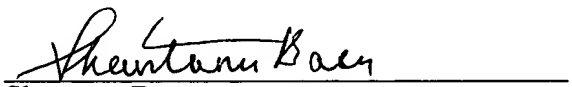
Further, "[t]rehalose in concentrations above 15% prevented this aggregation. (Specification, page 12, line 35 – page 13 line 1.). In addition, the Specification discloses "that more than 30% w/v trehalose is necessary to completely prevent aggregation of aluminum hydroxide." (Specification, page 8, lines 28-30). Cox *et al.* disclose the use of trehalose only at a concentration of 5% and do not teach, suggest or inherently disclose the concentrations of trehalose necessary to prevent aggregation of aluminum hydroxide as taught by the present invention and specified in claims 53 and 54.

Therefore, Applicant respectfully submits that the rejection under 35 USC §102(b) over the Cox *et al.* patent be withdrawn.

In light of the Amendments and the arguments set forth above, Applicant earnestly believes that he is entitled to a letters patent, and respectfully solicit the Examiner to expedite prosecution of this patent application to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 263742000201.

Respectfully submitted,

Dated: March 10, 2003 By: 

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